DOCUMENT RESUME

ED 184 296 FL 010 684

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TITLE Future Directions in Second Language Research.
PUB DATE Feb 77
NOTE 16p.: Paper presented at the Los Angeles Second Language Research Forum (1st, Los Angeles, CA, February 11-13, 1977).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Language Attitudes; *Language Processing; *Language Research; Learning Motivation; *Learning Processes; *Linguistic Performance; Predictor Variables; Research Design; *Research Methodology; *Second Language Learning; Statistical Analysis

ABSTRACT

Progress that has been made in second language research in the last two years and future directions in the research methodology of second language studies are discussed. In order to examine the continuation and expansion of current research, the research reported by Schumann (1976) is compared with current research as represented by the titles of papers being given at the 1977 Los Angeles Second Language Research Forum. A diagram Schumann used to discuss the research related to second language learning is expanded to include both linguistic and extralinguistic input and modified to reflect other characteristics that recent research has investigated. Two trends in second language research are: (1) increasing numbers of linguistic structures and systems are being examined, and (2) language is being viewed as a tool that is used by speakers to convey meanings and intentions. Results from the research on what is learned have been used as the basis for inferring learning processes and strategies of second language learning. It is suggested that controlled experimentation related to strategies and techniques is needed. Second language research has relied heavily on case study research which has been either longitudinal or cross-sectional and has drawn on the methodology of first language research and the methodology of linguistics. It is suggested that the methodology of experimental psychology be used. (SW)

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Proceedings of the Los Angeles Second Language Research Forum.

Future Directions in Second Language Research

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When Sabrina asked me what title she should put down on the program for this talk, my first reaction was to ask her what Evelyn was going to talk about. She said that Evelyn was going to give an historical perspective on second language research -- saying what has been done, and why. With the information that Evelyn was going to give an historical overview, I glibly said to Sabrina: "Well, so then I should talk about future directions in second language research!"

So there's the title! And although I doubt that any of you will agree with everything I have to say about it, and all of you will want to add, delete or substitute something, I still think the title is a good one. As a matter of fact, I think it is one that each of us should have to sit down and write about, if for no other reason than that it forces one to stand back and look at the field as a whole, to think about the direction it is taking as perhaps opposed to the direction one thinks it should be taking, and to consider whether one's own research -- which can be no more than a drop in the bucket -- is consistent with this broader perspective.

I intend to discuss future directions of second language research under two general categories:

(1) continuation and expansion of current research, and
(2) research methodology.

Continuation and Expansion of Current Research

Almost exactly two years ago, a Conference was held on second language acquisition at the University of Michigan (Brown, 1976). At that Conference several speakers were invited to present papers which represented major current issues in the field. Specifically, John Schumann was asked to summarize and discuss the research related to the second language learner (Schumann, 1976). Other papers presented also discussed research findings. But for the most part, these were considered -- at least summarily -- by Schumann in his paper. My approach, then, to looking at the continuation and expansion of current research is to start from the research Schumann reported on just two short years ago, and compare it with current research as represented by the titles of the papers being given at this Conference, as well as other ongoing research that I am aware of. The comparison is, I think, both encouraging and promising.

Figure 1 reproduces the diagram Schumann used to discuss the research related to second language learning two years ago. The first box represents affective variables. The variables listed in the box are ones which research had indicated influenced, in some way, the extent of learning. The second box represents the "how" of learning -- "the cognitive operations that the learner performs on the target language input data" (Schumann, 1976, p. 15).

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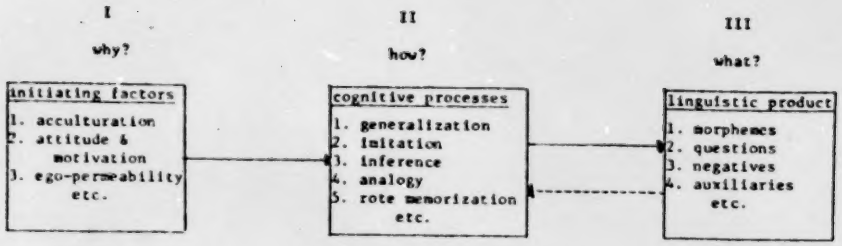

Figure 1: Schematic representation of the second language learning process

Taken from: Schumann, J.H. "Second Language Acquisition Research: Getting a More Global Look at the Learner" in Brown, H.D. (ed.), Papers in Second Language Acquisition. Ann Arbor, Mich.: Language Learning, 1976, p. 15.

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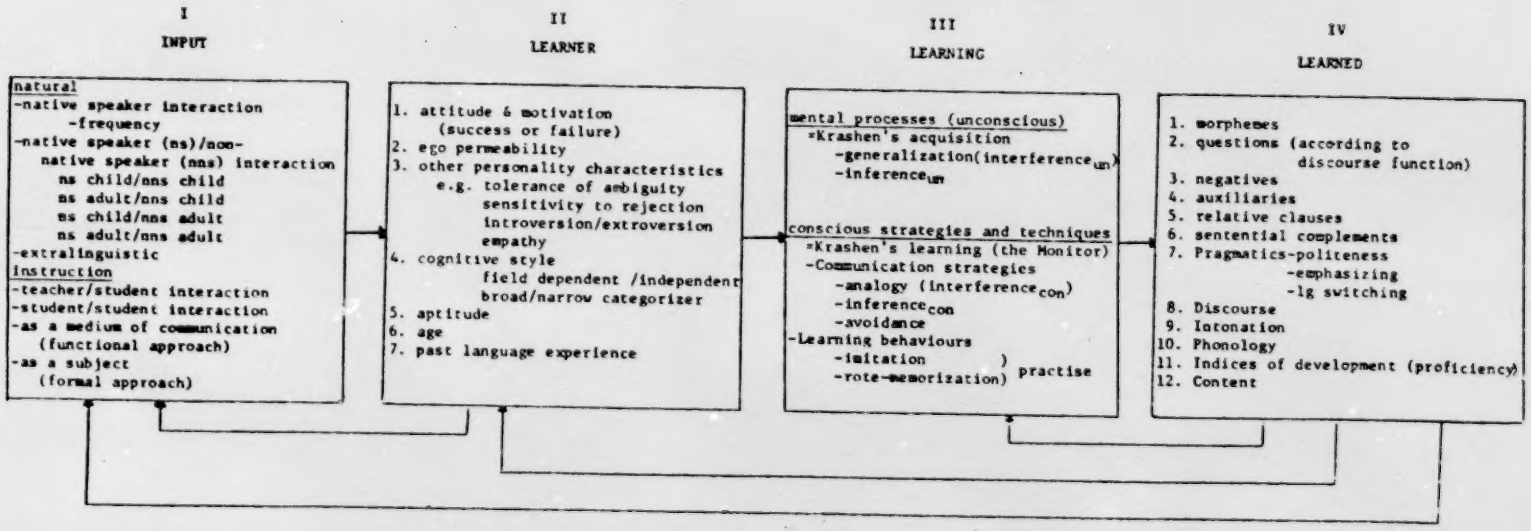

Figure 2: A model of the second language learner and second language learning

For the most part, the cognitive processes listed in the box are ones which have been inferred from examining the "what" of language learning. The "what" of language learning is represented in the third box. Again, the list in the third box represents, to a large degree, the major aspects of language that had been examined by researchers to that point in time -- a rather impoverished set as we look at what researchers are beginning to examine these days.

In order to document the progress that has been made in second language research in the last two years -- and in so doing, to point out the new directions being taken in a rapidly expanding field -- I have taken Schumann's model and added to it. The results are shown in Figure 2.

The first point you should notice immediately is that there are four boxes instead of three. I found it essential to add a box concerned with input -- both linguistic and extralinguistic.

You will also notice immediately that the title of the Figure has changed from "Schematic Representation of the Second Language Learning Process" to "A Model of the Second Language Learner and Second Language Learning." Perhaps that is somewhat presumptuous. However, it provides a framework which will organize and guide a discussion of current and future research. As with any model, it may perhaps be limiting and selective. However, as with any model its strength will be tested by its ability to incorporate the domain of issues addressed by researchers interested in the second language learner and second language learning.

The third point which is immediately obvious is that the boxes have been relabelled from "why", "how" and "what" to "learner", "learning" and "learned." The main reason for having done this is that "why" seemed an unsatisfactory label to me. The "why" of second or foreign language learning seems to me to be a matter of fate -- you're required to take a course in order to graduate from high school, your parents have immigrated to the United States and you need to learn English to survive, you have a job and your employer tells you that you have to learn French in order to be promoted (as with Canada's civil servants), and so on. The extent to which the second language is learned will, however, be a function of the learner's characteristics. And it is basically those characteristics which are listed in the learner box. I have removed acculturation because I think the degree to which one acculturates is probably a function of other learner characteristics such as personality, rather than it being a characteristic in its own right. And I have added other characteristics which recent research has investigated, or which current and planned research projects intend to examine as they relate to what is learned, and how it is learned.

You will also notice that under motivation and attitudes, I have added in parentheses, success or failure. This is because one of the papers being presented at this Conference -- a paper by Judy Trabert -- is related to the

role of success or failure in foreign language learning, which must surely relate to attitudes and motivation. A propos this issue, of which comes first -- positive attitudes which lead to success in language learning, or success in language learning which leads to positive attitudes? -- longitudinal data have not been available until recently. A study undertaken by the National Foundation of Educational Research (NFER) in England which examined, among other things, the attitudes and achievement of children over a ten year period who were introduced to French at the primary level, demonstrates "that nothing succeeds like success." In other words, early success was more likely to lead to positive attitudes than were positive attitudes likely to lead to later success (Burstall et al, 1974). It is therefore important, as I will mention again shortly, to question the relative importance of the learner characteristics listed.

The fourth point which should also be immediately obvious is that the boxes of Figure 2 have a lot more in them than the boxes of Figure 1. So let's turn now to examine the contents of each box, starting with the Learner. It will soon become apparent, however, that it is difficult, if not impossible, to talk about any one box in isolation. In fact, one of the significant aspects of the model is that the relations between the boxes become as important as what is in each box.

Much of the recent and current research concerned with learner characteristics has addressed itself to the issue of whether the particular variable under consideration affects the level of second langauge proficiency attained by the learner. For example, all other things being constant, do individuals who have a high tolerance of ambiguity score higher on a test of second language proficiency than individuals who have a low tolerance of ambiguity?

Additionally the question of the relative importance of learner characteristics in second language has been examined. Gardner and his colleagues for example, in attempting to determine the importance of language aptitude relative to motivational and attitudinal variables, obtained findings which suggest that "motivational variables are as highly related to second langauge achievement as are indices of language aptitude" (Gardner et al, p. 199) especially at early stages of second language acquisition. Furthermore, their results indicate that "motivation is a much more potent factor in determining who will avail themselves of extra-curricular French practice than is language aptitude" (p. 203) at all stages of second language learning. Two other studies have also examined the relative power of learner variables to predict second language proficiency. Like Gardner's study, The Good Language Learner study conducted by Naiman, Fröhlich, Stern and Todesco (in press) took stage of learning into account while incorporating a more extensive set of learner variables.

Tucker, Hamayan and Genesee (1976) also examined the effect of an extensive set of learner variables on second language achievement, but they added two new dimensions to their study: they measured second language achievement in each of the four skill areas -- reading, writing, speaking and listening, and they took the context of learning into account. All

students were native English-speakers in grade 7, but one group had participated in an early French immersion program -- that is, French was the medium of instruction at all grade levels for some portion of the day; a second group had had daily periods of instruction in French as a second language from kindergarten to grade 6, and was currently enrolled in a grade 7 French immersion program where French was the medium of instruction for most of the school day; and a third group was participating in a regular English program in which they had had daily periods of instruction in French as a second langauge since kindergarten.

Taking these three studies together, the results indicate, first, that certain learner characteristics are more important than others in predicting second language proficiency. Secondly they indicate that the importance of learner variables in predicting second language proficiency varies with the stage of learning and with the context of learning. In Figure 2, the fact that it varies with the stage of learning is represented by the arrow going from box IV to box II, and the fact that it varies with the context of learning is represented by the arrow going from box I to II. Thirdly the results indicate that the cluster of learner variables which predict proficiency in one skill area is not necessarily the same cluster of variables which predict proficiency in another skill area.

I have described these studies, albeit briefly, in order to indicate the direction learner related research has taken in the last two years, and the directions which seem fruitful to explore in the future. These are:

(1) The identification of additional learner characteristics. I suspect Doug Brown in his paper, and Rebecca Jones in her paper will provide us with some new variables to consider.

(2) The weighting of the relative importance of learner variables under various stages of learning and various contexts of learning. The outcome of such a set of studies should increase our ability to match learners to appropriate instructional settings. Had relevant research findings been available, Canada's second language program for adult civil servants might never have made the serious mistake of developing a course based entirely on a strict interpretation of the audio-lingual method.

(3) The construction of an index, or indices -- at least one to represent each skill area -- of second language proficiency. From the title of their paper, it would appear that Diane Larsen-Freeman and Virginia Strom have already begun work in this area. A set of valid indices would permit comparability of findings across studies. I might add that I think cloze testing is a productive area to explore for these purposes as well.

(4) The specification of the relationship between a particular learner characteristic and a particular learned aspect of language as outlined in box IV. Guiora has, for example, demonstrated a relationship between degree

of ego-permeability and the ability to pronounce foreign language sounds in a native-like way. Other relationships might be interesting to explore, for example, the relationship between certain personality characteristics and learning to be polite in a second language, or the relationship between cognitive style characteristics and the development of the morphological or syntactic system. I suspect that cognitive style has a great deal to do with how learners approach the language learning task, and this should be reflected in the learner's output. A detailed and thorough exploration of the linguistic output of learners varying on any one learner dimension has yet to be undertaken. It is only at this level of analysis that we will begin to be able to account for the variation in developmental sequences.

I want to turn now to box IV -- what is learned? As you can see, a lot has been happening in the last two years, much of which I think has set directions for future second language research. I see two main trends: one is that increasing numbers of linguistic structures and systems are being looked at. The second, and more important, is that language is being viewed in a broader perspective -- as a tool that is used by speakers to convey meanings and intentions.

The first trend is represented in papers being presented at this Conference by, for example, Lonna Dickerson on second language phonological development, Nancy Backman on intonation, and Janet Anderson on sentential complements. Research in the future will expand to include more and more aspects of language. To a large extent this research has focussed on the order of acquisition of linguistic elements in naturalistic contexts (macro-analysis), as well as the course of acquisition over time of any particular linguistic element (micro-analysis). Presumably the results of these studies will eventually provide input to the curriculum specialist in designing instructional materials. However much remains to be done, although some principles of naturalistic second language acquisition are beginning to emerge as indicated by the title of Henning Wode's paper. Additionally, second langauge data from adult learners, where linguistic development is unlikely to be confounded with cognitive development, provide an excellent testing ground for issues concerned with such theoretical constructs as linguistic complexity. Investigation of pidginization, such as that of Francesca Agnello, constitute an example of this.

The second trend, that language in being viewed in a broader perspective -- as a tool that is used by the speaker to convey meanings and intentions -- is represented in papers being presented here by, for example, Bruce Fraser and Ellen Rintell on learning to be polite, Chris Adjemian on emphasizing, Kathryn Lindholm and Amado Padilla on bilingual children's use of language mixing and switching, and Patsy Lightbown on what learners talk about. It is also represented in the papers which examine discourse or interaction patterns for the purposes of identifying what a learner is being required to do with language. What he is being required to do will determine what he learns to do because it represents his communicative needs.

In this respect, a new look is being given to an old question. For example, Sue Vander Brook, Karen Schlue and Cherry Campbell are presenting a paper which examines the acquisition of inversion in yes/no questions according to discourse function. This trend must spread to other aspects of the linguistic system as well.

There are other functions of language as well. One function which Halliday (1973) discusses, and which remains relatively unexplored in second language research is the imaginative function -- the use of language to construct one's own reality, to reconstruct past events, and to imagine new ones. All native speakers use their language in this way. Do non-native speakers also use language in this way? And if so, at what stage in learning does this happen? And with what consequence for the learner?[1] These are issues which future research might explore.

Results from the research on what is learned have been used as the basis for inferring learning processes and strategies. If we look now at the "learning" box and compare it with the "how" box of Schumann's figure, a number of changes can be noted. I found that, unlike the other boxes, it was not possible just to delete or add items, but rather it was necessary to reorganize the items listed on the basis of recent research and theoretical advances. As you can see, the learning box now contains two major headings -- unconscious mental processes, and conscious strategies and techniques. The distinction is, I think, equivalent to the distinction Steve Krashen makes between acquisition and learning.

I have listed generalization and inference under mental processes. You will notice that I have added interference in parentheses after generalization. As Barry Taylor (1975) has argued, generalization and interference appear to be two different linguistic manifestations of one psychological process. "That process is one involving reliance on prior learning to facilitate new learning" (p. 66). Whether interference or generalization occurs, that is whether interlingual or intralingual errors are observed, will depend on the proficiency level of the learner. This is represented by the arrow going from the learned to the learning box.

While we are on the subject of interference, I would like to make another point that seems obvious once stated, but which seems to have been overlooked in the argumentation about the relative importance of interference as a process in second language learning. As Barry Taylor has pointed out, interference errors are more frequent at early stages of learning. However, many of the studies which claim that interference errors only represent a small portion of the errors observed in the data deal with learners whose

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[1] I suspect that the "threshold hypothesis" postulated by Cummins (1976) and the use of language for the imaginative function are related in some way.

knowledge of the second language is relatively advanced. In fact researchers seemed to have shied away from looking at initial stages of language learning, perhaps for similar reasons as Kyle Perkins and Diane Larsen-Freeman (1975), who dropped a group of learners from their study "because they could not understand or produce English sentences" (p. 239). I may be wrong, but I think the initial stages of learning are the most fruitful stages to study if we are to understand the processes by which a learner derives meaning from the sounds he hears.

Inference I take to mean the process by which the learner derives an hypothesis or conclusion about language based on evidence presented to him. The evidence may be linguistic or extralinguistic. The hypothesis or conclusion about language may relate to its structure or its meaning. The nature of inferencing is by no means understood, and is currently the subject of considerable activity in first language acquisition research. Results from first language studies point to specific factors which facilitate the interpretation of a message such as familiarity of subject matter (Olson and Nickerson, in press) and actual presence of the objects of the message (Macnamara, 1972; Nelson, 1974). If these conditions are so critical in first language learning in helping the learner to make sense of the linguistic noise around him, perhaps their presence is equally as important in second language learning. Research which identifies factors that facilitate the interpretation of messages encoded in the second language would have considerable relevance for teaching practices. As I see it, these factors as they are uncovered in the future would be indicated in the input box. This accounts for why extralinguistic is included in the input box -- as a kind of place-holder for factors which may be identified in the future. Second language research might also contribute significantly to an understanding of the inferencing process through an investigation of adult learners, where the process is not confounded by cognitive development. These are certainly directions which future research can fruitfully take.

Under conscious strategies and techniques I have listed communication strategies and learning behaviours. Learning behaviours refer to activities and techniques used by a learner to learn the elements and structure of the language. Imitation and rote-memorization from Schumann's list have been included here. Other specific techniques might be added, many of which have been identified by Naiman, Fröhlich, Stern and Todesco (in press) in their interviews with successful second language learners (pp. 55-60). Mari Wesche will be reporting here on learning behaviours of successful adult students involved in an intensive language training program. The practical value of this research is undisputed -- it serves as a list of techniques which learners might themselves try, and it serves as a reminder that language is learned through conscious attention to form.

Communication strategies refer to how the learner consciously attempts to derive or express meanings and intentions using his existing linguistic repertoire. Communication strategies have been inferred from an examination

of the learner's output. Analogy results in output that empirically would be difficult to distinguish from generalization. However, the output of analogy is presumably based on a conscious comparison of current with past situations. Similarly there must be a conscious level analogue to inferencing -- but I know of no satisfactory label: informed guessing seems to come closest. Avoidance strategies refer to a learner's conscious attempt to steer clear of specific sounds, structures and ideas that will cause difficulty in expression. The labels seem unsatisfactory and the list incomplete compared with the strategies learners probably make use of. Increased understanding of communication strategies used by the learner is bound to emerge from the research on pragmatics and interaction patterns. Margaret Stovall's paper on strategies of communication in ESL learners is a start in this direction.

Additionally, however, controlled experimentation related to strategies and techniques which have been identified is needed. As with the unconscious mental processes, we need to isolate factors which facilitate the operation of strategies and techniques which are effective. This means first determining which strategies and techniques are in fact most effective, for what and for whom. We do not know, for example, what role learner characteristics have on the effectiveness of practice, or for that matter, on its use, non-use, or use relative to other strategies and techniques. Nor do we know what role practice plays in settings requiring the learner to use the language for communicative purposes. Nor do we know if practice in speaking facilitates reading, for example.

In summary, although processes and strategies of learning have been inferred from product level research, experimentation isolating factors which lead to the most effective operation of these processes and strategies is critical in the future if research is to provide results which will improve instructional practices.

Let us now consider the first box, the one labelled input. The importance of input in accounting for order of acquisition has long been recognized, but until recently little empirical data had been collected, and what was collected tended to be analyzed in relation to frequency. Diane Larsen-Freeman reported for example, that frequency of occurrence of morphemes in adult native-speaker speech best accounted for the order in which those morphemes were learned by second language learners (1976). I notice that Ellen Rosansky is presenting a paper here which also discusses frequency in relation to morpheme accuracy orders. However, I suspect that papers like Bill Gaskill's on adult native/non-native speaker interaction and Herbert Seliger's on interaction patterns will tell us -- as does first language research -- that there is more to input than frequency, most importantly function.

Studies of native/non-native speaker interaction in natural settings are important not only as a source of explanation for acquisition orders but also as points of comparison between natural and instructional second language learning settings. First language studies have indicated that teacher-student interaction patterns are different in form and function than out of school

conversations (e.g., Barnes, 1972). Who but a teacher would ever ask a question when they already knew the answer, and furthermore would reject the answer unless it was given "in a complete sentence"? So we should not really be surprised when this happens in a second language classroom where the purpose of instruction is to teach the language. But even so, there is value in knowing how "instruction" takes place in natural second language learning settings -- how and when does the native speaker correct a learner's utterance? in what way and when does the native speaker simplify speech addressed to a learner? under what conditions does he provide cues to meaning and intention? does he resort to extralinguistic cues or paraphrase? what are the characteristics of the paraphrase? what are the features of the extralinguistic cues? how do these input characteristics affect learner output? A number of papers being presented at this Conference consider these issues, for example, Joan Schwartz's paper on extralinguistic features in conversational repairs of adult second language learners, and Cherry Campbell, Bill Gaskill and Sue Vander Brook's paper on simplification, frequency and repair of questions in foreigner talk.

The same questions need to be asked of teacher-student interaction both when the second language is used as the medium of instruction and when the second language is the subject of instruction. It may be that teaching conditions, for example, one teacher to 30 pupils, restricts the nature of interaction in inevitable ways, but there are probably many features of natural input which could be adapted to the classroom setting.

The characteristics of input change with proficiency level of the learner -- the diachronics of foreigner talk input as Joel Katz has called it. This is represented by the arrow going from box IV to the input box. The characteristics of the input also change with the characteristics of the learner -- age, for example, accounts for the four-fold distinction under native speaker/non-native speaker interaction in the input box. The four-fold distinction is therefore redundant as long as the arrow from box II to box I exists. Exploration of the relationships between what is learned and input, between learner characteristics and input, and between input and the operation of learning processes and strategies has scarcely begun. Investigation of these relationships is surely a direction for future research -- they are rich with fascinating hypotheses, and rich with implications for language teaching practices.

Research Methodology

I mentioned at the beginning of this talk that I wanted to discuss future directions of second language research under two general categories -- continuation and expansion of current research, which I have just done, and research methodology. I want now to briefly discuss future directions in the research methodology of second language studies.

Second language research has relied heavily on case study research which has in some instances been longitudinal in nature, as well as on larger-scale cross-sectional research. Both approaches have an important

place in second language research and what I want to say is in no way intended to negate their role. However, there is also an important role for controlled experimentation in second language research, as well as considerable room for improvement in the current methodology of cross-sectional research.

We have already seen that the model of the language learner and language learning has become exceedingly complex, with many variables to consider, and many interrelationships to explore. Advances in our understanding of the effect of particular variables and the effect of their interaction is going to depend to a large extent on the sophistication of our research methodology. Methodology includes research design, procedures, instruments and data analysis.

Through the design of the research and through the use of particular data analyses, it is possible to isolate one or several independent variables and determine their effects, and the effects of their interaction on the dependent variable or variables. In other words, control over the independent variables one intends to examine can be accomplished either through the research design or through statistical analyses.

Research designs and data analyses can be exceedingly complex. Anyone who has struggled through Winer's (1962) classic on Statistical Principles in Experimental Design, or leafed through the Journal of Experimental Psychology will know what I mean. But essentially, research design involves certain basic principles, all of which aim to ensure that the results obtained are due to the variables under investigation, rather than to some other variable or to some aspect of the testing procedure itself. Research design includes, for example, random selection of subjects, inclusion of specific control groups, varying the order of presentation of tests or test items, and so forth. As I said, control over variables may also be accomplished through the use of particular data analysis procedures. For example, it is possible to "take out" the effect of a quantified variable through techniques such as partial correlation, analysis of covariance and multivariate analysis of covariance. Second language research has paid little attention to these possibilities in the past.

Not only does statistics allow for the control of variables not controlled for in the research design, but it also permits large quantities of data to be summarized through the calculation of, for example, averages and standard deviations. In so doing, it must not be forgotten that much information may be lost. Ellen Rosansky (1976) argues in her thesis that the sequence of morpheme acquisition reported in the literature may have resulted because of artifacts associated with the statistical methods employed for grouping and ranking the data. Examination of the data for individual learners revelaed variability among learners, and examination of the data for one individual over time revealed that the morphemes did not maintain a stable ordering relative to each other. Her study indicates that other means of summarizing linguistic data need to be explored in the future. Perhaps scaling analysis, which Lloyd Anderson will be discussing is a step in this direction. Rosansky's study also raises the issue of the relationship between longitudinal and cross-sectional data which needs to be resolved.

There are other things one can do with statistics: it is possible to determine whether the performance of two or more groups of learners differs, indicating the probability of error through techniques such as t-tests, analysis of variance, and multivariate analysis of variance; it is possible to determine the relative effect of several variables on performance through techniques such as regression analysis; and it is possible to determine the degree of relatedness of a set of variables through factor analysis. Data analysis in second language research has not advanced much beyond correlations and t-tests, and in my opinion, it needs to do so.

As I said, methodology not only includes research design and data analysis, it also includes procedures followed and instruments employed. Procedures include such aspects of methodology as the instructions the subjects received; the amount of time they were given to respond; the types of responses recorded; the means of recording the responses; the conditions under which the subjects were tested -- whether individually or in a group, whether in a classroom or in their homes; and so on. In other words, under procedures enough information should be provided so that if a similar study were undertaken and different results obtained, it could be determined if differences in procedure might be the cause. In the reporting of second language research, researchers have often neglected to make explicit all the procedures followed.

Instruments include all the devices used for obtaining information from the subjects. One of the tasks of future research is to develop valid and reliable instruments, as well as to obtain validity and reliability indices of many existing instruments. This is equally as true for measures of learner characteristics as it is for measures of linguistic ability and communicative competence. We have been experimenting with the use of cloze tests for measuring second language proficiency in young children (Swain, Lapkin, and Barik, 1976), and have begun to develop tests which will measure aural communicative competence and reading communicative competence. A great deal remains to be done. At this Conference the validity of self-reported language proficiency, attitudes and personality is being questioned by John Oller and Kyle Perkins.

In summary, the methodology of second language research is in its infancy. We have drawn on the methodology of first language research from ten years ago, and the methodology of linguistics. I think we also need to draw on the methodology of experimental psychology, which is the direction first language research has moved in.

In conclusion, I want to say that second language research has come a long way in the last few years. We have moved from looking at a few isolated aspects of second language output to a dynamic model of the learner and language learning. The challenge of the model is not simply to investigate the variables listed, but to explore the interrelationships between the input, the learner, the learning and the learned. In order to do this, more complex methodology is required than is currently being employed. As

"facts" begin to emerge, we can begin to move into a second round of research. This second round of research will involve establishing hypotheses about the relevance of what we have learned about the second language learner and language learning to second and foreign language teaching, and testing those hypotheses. In the meantime, there is a lot to keep us busy.

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